

DETAILED ACTION

Status of Application

Claim 1 has been amended.

Claims 4-5 and 27 are canceled.

Claims 9-26 are withdrawn from consideration.

Claim 44 is new

Claims 1-3, 6-8, and 28-44 are presented for examination.

Examiner's Amendment

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee. The application has been amended as follows:

Claim 15 should be amended to read: "The method according to claim 12, wherein said reaction is for desulphurising hydrocarbons and fuels, petroleums, kerosenes and gas oils.

Non-elected claims 9-16 are hereby rejoined because they depend from the allowable claims.

Non-elected claims 17-26 and 28 are canceled.

Allowable Subject Matter

Claims 1-3, 6-16, and 29-44 are allowed. The following is an examiner's statement of reasons for allowance:

Applicants have amended the claims to overcome the prior art. The closest prior art on record fails to teach a catalyst material such that tungsten is present primarily in the tetrahedral form when tungsten is present in an amount between 15-25% by weight relative to the mass of the support.

Vaudagna et al. teach tungsten oxide on a zirconia support [See Abstract]. The sample is prepared by impregnation of the dried hydroxide support with a tungstic acid solution. The reference teaches that with more than 15% WO₃ on the support, the obtained catalyst will comprise tungsten in tetrahedric and octahedric forms. The reference also notes that when there is less than 15% WO₃ on the support, tungsten has a tetrahedric coordination and between 15 and 24%, the Vaudagna reference teaches a combination of octahedral and tetrahedral geometry.

These findings are confirmed by the other prior art references which show that at low loading (less than 15 wt. % tungsten), the species is tetrahedrally coordinated. From 15-24%, a polymeric (octahedral) species forms and above 24%, bulk WO₃ crystals form on top of the monolayer [See Salvati et al, Page 3707, Conclusion]. This is due to the interaction between the tungsten species and the surface layer. For low

surface areas, below the monolayer value, only one TPR peak is observed. For values equal to a monolayer, other peaks are observed [See Yori et al., Page 173, Column 2, last paragraph].

The present invention overcomes the limitations taught in the prior art to produce a solid material containing 15-25% tungsten on a support wherein tungsten in the solid consists essential of tungsten in tetrahedral form.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Claims 1-3, 6-16, and 28-44 are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JENNIFER A. SMITH whose telephone number is (571)270-3599. The examiner can normally be reached on Monday - Thursday, 9:30am to 6:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo can be reached on (571)272-1233. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/J.A. LORENZO/
Supervisory Patent Examiner, Art Unit 1793

Jennifer A. Smith
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Art Unit 1793